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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,737

09/07/2006

Chris T. Vild

MLCZ 2 00126

9369

27885

7590

01/28/2009

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EXAMINER

KASTLER, SCOTT R

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

01/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,737	Applicant(s) VILD ET AL.	
	Examiner Scott Kastler	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-18,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-18,20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-9, 10, 14, 15, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vild (6217823) in view of Anderson et al (3776660) and Mordue et al (6451247). Vild, in the figures for example, teaches a scrap submergence device for use within a furnace system with a pump and dross well comprising a body comprised of a refractory material defining a submergence chamber, where the body includes a vertically upward sloped inlet passage for allowing material into the chamber where the inlet passage is at least substantially tangential to an inner surface of the submergence chamber and is disposed in a side wall. The body further defines an outlet opening disposed in a base at substantially a same height within the submergence chamber and an inlet opening and an outlet extension tube connected to the body and in communication with the outlet passage (see Figs 2 and 4 as well as col. 3 line 47 to col. 4 line 28 and the claims for example), thereby showing all aspects of the above claims except the use of rods inserted within the body for placing the body under compression.

Anderson et al teaches, at col. 1 line 52 to col. 2 line 30 for example, that it was known in the art at the time the invention was made to employ a frame, rods and resilient means (springs) for placing refractory bodies under compression in order to thermal expansion stress, as well as to reduce rupture and failure of refractory components. Mordue et al teaches that placement of rods

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through refractory components for the purposes of producing secure connections and simpler, more compact constructions was also known in the art at the time the invention was made. Because all refractory products, including the structures of Vild, employed in the processing of molten metals would desire reduced chances of rupture and failure, motivation to employ a frame and compression inducing rods, as described by Anderson et al, to induce compression in refractory structures, including bodies defining submergence devices as described by Vild, where in order to make the apparatus more compact the rods are deployed within the refractory as described by Mordue et al would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 11, 12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vild in view of Anderson et al and Mordue et al as applied to claim 10 above, further in view of Hall (1773729). As applied to claim 10 above, Vild in view of Anderson et al and Mordue et al show all aspects of the above claims except the removability of the device or side wall or a notch/protrusion construction for joining the side wall and base. It has been well settled that motivation to make parts separable, where desired which are shown in the prior art to be of unitary design, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See MPEP 2144.04 V C. Hall teaches (see Fig. 1 for example) that notch/protrusion arrangements were well known in the art at the time the invention was made as typical arrangements for joining separate refractory parts into a single composite component. Because the ability to replace parts (the side wall and base for example) that wear at differing rates would be desirable in the system described by Vild in view of Anderson et al and Mordue et al, motivation to make various parts disclosed by Vild in view of Anderson et al and Mordue

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et al as separate components joined together in the manner recited by Hall, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vild in view of Anderson et al and Mordue et al further in view of Gilbert (6036745). As applied to claim 10 above, Vild in view of Anderson et al and Mordue et al show all aspects of the above claims except the use of a diverter or gas inlet as recited in the above claims. Gilbert teaches, that in order to improve operation of a submergence device of the type taught by Vild, it was known in the art at the time the invention was made to employ both a diverter means for controlling vortex flow (col. 3 lines 26-41 for example) and a gas injection means (col. 8 lines 18-40 for example). In order to improve vortex and flow properties of the system described by Vild in view of Anderson et al and Mordue et al, it would have been an expedient obvious to one of ordinary skill in the art at the time the invention was made to employ the flow controller in the form of a diverter and gas injection taught by Gilbert in the system described by Vild in view of Anderson et al and Mordue et al.

Response to Arguments

Applicant's arguments filed on 11/28/2008 have been fully considered but they are not fully persuasive. Applicant's response however, has overcome the rejections of claims 18-20 under 35 USC 112 second paragraph by the amendment of 11/28/2008, as well as the provisional obviousness type double patenting rejection of the pending claims by the submission of the properly filed terminal disclaimer on 11/28/2008. Applicant's arguments with respect to the rejection of claim 21 as anticipated by Greaves his convincing and this rejection has been

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withdrawn. Applicant's argument however, that the presently amended claims are not obvious over Vild in view of Mordue et al because Mordue et al does not teach the desirability of producing compressive forces within a refractory body defining a submergence device itself is moot in view of the newly cited reference (Anderson et al) which teaches that it was known in the art at the time the invention was made to be desirable to produce compressive forces in refractory bodies intended to be employed in molten metal processing in order to reduce rupture and failure of the refractory parts.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott Kastler/
Primary Examiner, Art Unit 1793

sk